

Assessment For Mortality Rate Children Under Five Years In Mosul City

تقييم معدل وفيات الاطفال دون سن الخامسة من العمر في مدينة الموصل.

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الخلاصة

الهدف:- احصاء معدل وفيات الاطفال دون الخامسة من العمر في مدينة الموصل ولاكتشاف سبب الوفاة الأكثر شيوعا بين الاطفال.
المنهجية:- دراسة ذات اثر رجعي لحساب معدل وفيات الاطفال دون الخامسة من العمر في مدينة الموصل واكتشاف سبب الوفاة الأكثر شيوعا بين الاطفال. للمدة من ١ كانون الأول ٢٠١١ ولغاية ١٥ كانون الثاني ٢٠١٢. وكانت فترة الدراسة خلال الأعوام (٢٠٠٨-٢٠٠٩-٢٠١٠-٢٠١١)، تم جمع البيانات من مستشفى الخنساء التعليمية في محافظة نينوى من استعراض السجلات. بالإضافة إلى سبب الوفاة، وعمر الطفل وسكنه. تم تحليل بيانات الدراسة باستعمال الإحصاء الوصفي الذي تضمن التكرارات والنسب المئوية. علاوة على استعمال الإحصاء الاستنتاجي الذي شمل معامل الارتباط مربع كاي.
النتائج:- وظهرت النتائج ان أكثر أسباب وفيات الاطفال هي الأمراض التنفسية وتسمم الدم والتشوهات الخلقية
الاستنتاج:- استنتج الباحث ان معدل الوفيات بين الاطفال في مدينة الموصل كانت عالية اثناء فترة الدراسة (٢٠٠٨-٢٠١١) بالرغم من نسبة الخصوبة العالية.
التوصيات:- أوصت الدراسة بان هنالك حاجة مستعجلة للاستراتيجية لمنع وفيات الاطفال في العراق من خلال الخدمات الصحية والتطوير الاجتماعي والاقتصادي وتحسين وسائل تحديد النسل.
المفردات:- معدل وفيات ، الاطفال، دون سن الخامسة، الولادة، سن الانجاب.

Abstract

Objective:-To calculate under five years mortality rates in Mosul City and to find out the most common cause of death among children .

Methodology:-A retrospective study is applied to calculate under five years mortality rates in Mosul City and to find out the most common cause of death among children from 1st December 2011 up to the 15th January 2012. The period of the study during (2008-2009-2010-2011), data are collected from Ibn-Sena Teaching Hospital in Nineveh governorate from review of records. In addition to causes of death , age of child and residence .The data were analyzed by using descriptive statistical measures which included (Frequency, Percentage) as well as the use of inferential statistical measures which include the chi-square test .

Results:-The results of the show that the most common of mortality child is respiratory disease, septicemia and congenital.

Conclusion:- The researcher concluded that the high rate of childhood mortality recognized in Mosul city during period of this study (2008 -2011) together with the presence of high fertility rate.

Recommendation:-The study recommends that is an urgent need for strategy for prevention of childhood mortality in Iraq through health services provision and socioeconomic development and improvement of family planning facilities.

Keywords:-Mortality rates, Children under five years, Childbirth, Reproductive age.

INTRODUCTION:-

Children are the future of society and their mothers are guardians of that future⁽¹⁾. Pregnancy, childbirth and their consequences are still the leading causes of death, disease, and disability among women of reproductive age in developing countries⁽²⁾. Childhood mortality which comprises of infant mortality rate and under five mortality rate are key indicators used internationally, nationally and locally as a sensitive but not specific way of comparing health status and development within countries⁽³⁾. Under five mortality rate is also a good reflection of the general well being of children in an area^(4,5). Across the world there is an overall downward trend in under five mortality rates^(6,7). However, this trend was showing sign of slowing lately, though till the year 2005, almost 11 million children under five years of age will die from causes that are largely preventable globally. Among them are 4 million

who will not survive the first month of life. Poor or delayed care-seeking contributes to up 70% of child death .More than 50% of all child deaths globally occur in just six counties: China, the Democratic Republic of Congo, Ethiopia, India and Pakistan⁽⁸⁾. There are several factors contributing to the death of infants and children ⁽⁹⁾, these include socio-demographic status of family, level of community development and education, availability, access and quality of health services with neonatal mortality is associated with maternal health and access to care around the time of delivery and the presence of preventive and curative health services ^(10,11) . Uder-5 year mortality rates are highest among the poorest, but they are high even for the relatively wealthy. Infant and under-5 year mortality rates fell by more than half between 1960 and 1990. But progress slowed in the 1990s.. The problem of infant and preschool mortality is multifactorial as single factors seldom operate in isolation. These factors can be biological or socio-economical, although the distinctions between them are often made only for convenience. A high infant mortality rate among a vulnerable population may be due to the interaction of these biological, environmental and social risks ⁽²¹⁾. Some risk factors like maternal age, birth order and prenatal care are modifiable while others like ethnicity and sex are not ⁽¹³⁾. Evidence from developing countries relates infant mortality to socioeconomic development. Poverty, ignorance, isolation, lack of basic services and excessive fertility may make children more vulnerable to disease, hinder access to, and reduce the efficacy of medical services ⁽¹⁴⁾. The situation is different in industrialized countries where adequate medical care and a high standard of living was achieved long ago ⁽¹⁵⁾ .The mortality rate is determined by endogenous factors such as low birth weight and congenital disorders. By contrast, post neonatal mortality is determined more by exogenous factors, i.e. environmental and social factors ⁽¹⁶⁾. Maternal age under 20 years, for example, is a significant risk factor for neonatal and post neonatal mortality. Mortality rates are also higher among infants born to adolescents than among those born to older women ^(17,18). Furthermore, risk is associated with high birth parity and closely spaced pregnancies. This is consistent with the maternal depletion hypothesis in that women with many prior births may experience nutrition depletion that then contributes to the poor health of subsequent births ⁽¹⁹⁾. The objectives of the study to determine the mortality rate among children under five years in Mosul City for the period from 2008-2011. To identify the main reason which are often lead to death among children under five years and to determine M.R among under five years children in regard to certain variable: age –sex-residence.

METHODOLOGY

Prior to the actual collection of the data, formal administration approval was obtained from the Department of Health Nineveh province to conduct the study (Appendix A). A retrospective study design was adopted to achieve the objectives of the present study for period of (1-12-2011) throughout (15-1-2012).Collection data from the records in AL-Khansia Teaching Hospital one of the most crowded hospitals in Mosul City. Questionnaire –tool was used for data collection consisting of two parts, part one: socio-demographic characteristics including gender, age and address. The second part is concerned with types of disease that the causes of death for child .Data were analyzed through the application of descriptive statistical analysis (frequency, percentage) and inferential statistic (Chi-Square test)⁽²⁰⁾

RESULTS :-

Table(1) Distribution of Mortality rate under 5 years according their Age

Age of child	2008		2009		2010		2011	
	F	%	F	%	F	%	F	%
Under 1years	450	80.64%	577	88.09%	635	90.24%	464	75.21%
1-2 years	51	9.17%	38	5.8%	23	5.26%	74	17.18%
2-3 years	43	7.7%	20	3.06%	23	3.36%	44	8,33%
3-4 years	11	1.97%	15	2.29%	15	2,29%	21	6.73%
4-5 years	3	0.52%	5	0.76%	8	1.14%	6	0.88%
Total	558	100%	655	100%	704	100%	609	100%
P value $\leq$ 0.05 DF=12 X^2 obs= 76.667 X^2 crit =21.03 sig								

This table shows there is significant association between child age & mortality rate the high M.R among under one year of age (infants).

Table (2) Distribution of Mortality rate under 5 years according their Causes of Death

Causes of death	2008		2009		2010		2011	
	F	%	F	%	F	%	F	%
Respiratory disease	186	34.79%	261	39.21%	202	29.27%	198	30.76%
Septicemia	181	31.59%	169	26.45%	268	38.62%	176	29.58%
Congenital	105	19.17%	97	15.26%	113	15.34%	96	16.49%
Diarrhea	32	5.2%	65	9.01%	19	2.29%	53	8.7%
Others	54	9.25%	63	10.07%	102	14.48%	86	14.47%
Total	558	100%	655	100%	704	100%	609	100%
P value $\leq$ 0.05 DF=12 x^2 obs =76.881 X^2 crit =21.03 sig								

This table indicates that there is significant association between causes of death and mortality rate the most common cause of M.R is the respiratory problems, them septicemia.

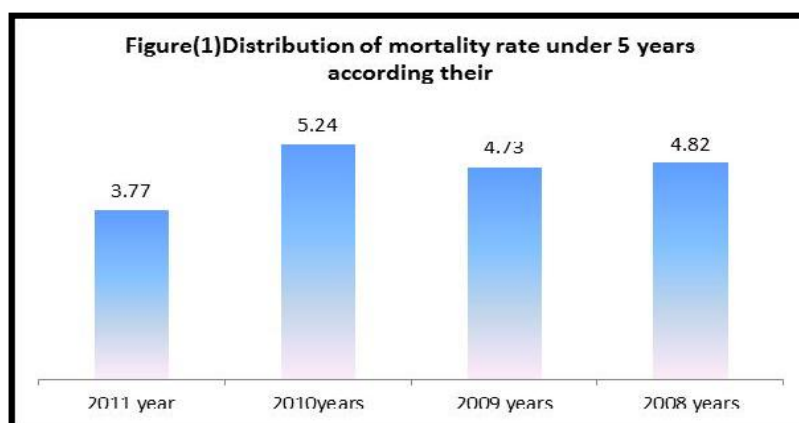
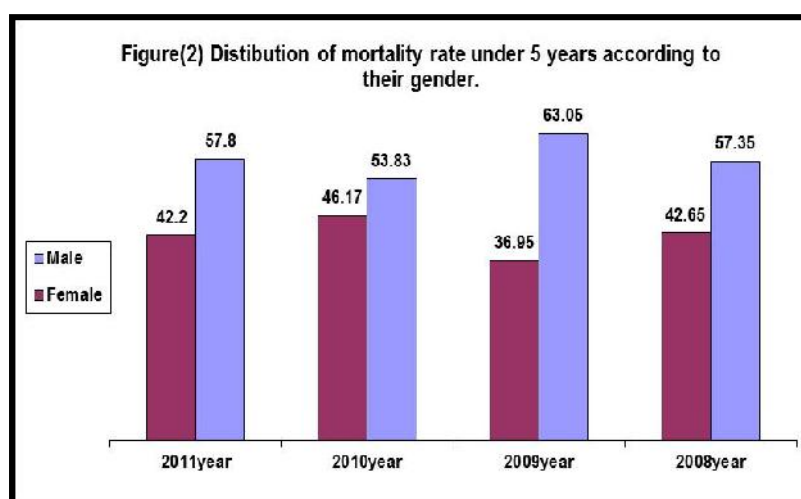
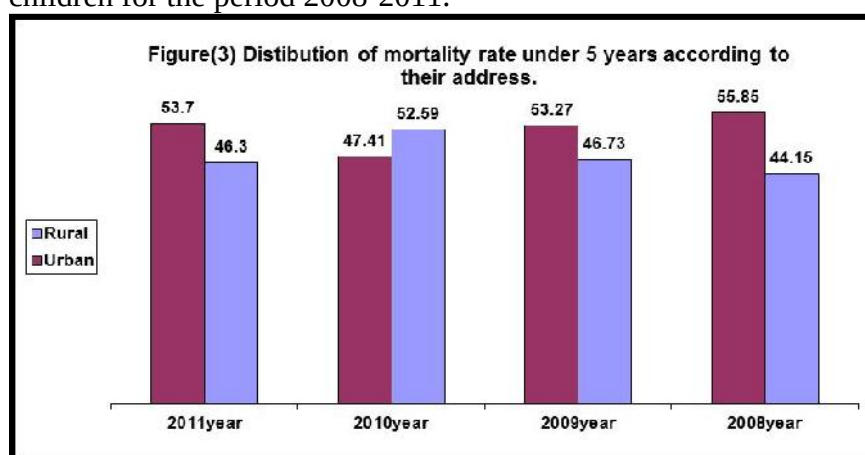


Figure (1) shows that the highest M.R among under five during 2010 and the lower rate during 2011.



Figure(2) indicate highest M.R among male children while it is lower among female children for the period 2008-2011.



Figure(3) shows the high M.R was recorded among urban children in 2008, 2009 and 2011 while it is higher among rural children in 2010.

DISCUSSION:-

The results analysis of mortality rate children under 5 years according their age showed the aged under 1 years the highest percent between the mortality of children, also during 2011 the highest percent and constituted(90.24%)of the total sample. The data analysis shows that there is a significant statistical between mortality rate and their age table(1). Analysis of the results of mortality rate children under 5 years according their age causes of death .This study indicated that the majority causes of death respiratory disease and constituted (39.21%). This study is in disagreement with the study of Bryce(2005) During 2000-2003, six causes accounted for 73% of the 10.6 million yearly deaths in children younger than 5 years of age, namely pneumonia (19%), diarrhea (18%), malaria (8%), neonatal pneumonia or sepsis (10%), preterm delivery (10%), and asphyxia at birth (8%).⁽²¹⁾ The east Mediterranean region accounts for almost 15% of the total global burden of newborn and child mortality, most of which is concerned in a few countries .The region comprises 22 predominantly Islamic countries, and health indicators vary widely. 91% of under-5 year deaths occur in just seven countries (Pakistan, Afghanistan, Egypt, Sudan, Somalia, Iraq, and Yemen)⁽²²⁾. Over 10 million children aged under 5 years die every year, almost 90% of them in a few countries in sub-Sahara Africa and South Asia. 60 70% of these deaths could be prevented (23-24-25). Several studies were carried out on causes of children mortality rates. In a survey done in Mafikeng, Krug et al found that the main causes of under-5 year mortality were lower respiratory tract infections, AIDS, and sepsis.⁽²⁶⁾ The study of leading death cause in china from 1996 to 2000 was done by Wang et al , This study, based on data from the national child mortality surveillance network, including 116 cities throughout China, reported a steady decline in the under-5 year mortality due to diarrhea, pneumonia, and neural tube defect. ⁽²⁷⁾ Several surveys have been done on the effects of single risk factors of under-5 year mortality, such as preceding birth intervals, political and welfare determinants, seasonal patterns, social class, and malnutrition (28-29). The highest rate of mortality rate children under five years are found in developing countries with primitive or limited medical facilities.

Figure(1) shows that there are the high rate of mortality in 2010 approximately (5.24%) of the total of sample. In Iraq Unicef of W.H.O produce report about June 1999 that included screening for maternal and children mortality rate also the report showed that bad health and economic of environment in Iraq because continuing of restriction in IRAQ Report cover a sample from over Iraq and Unicef representative and W.H.O representative meeting with (23920) house wife and it showed that children mortality rate under 5 years has been multiplied since (56) death of each (1000) birth during (1989- 1984) to (131) death of (1000) a life birth during (1999-1994) and death of infant increase from (47) death of 1000 birth a life birth to 108 death for (1000) birth the some mention brief also the report refer to increase more maternal mortality rate to 294 death for (100000)delivery during (1999-1989) about ration of 40 percentage for all person 1000.

Figure (2) shows that the man higher mortality than women approximately (63.05%) during 2009. The present study is in agreement with the study by Singh (2009) mention that Unsafe water, inadequate immunization, war and civil conflict, high levels of poverty and malnutrition, poor access to basic education, especially for girls are the most important causes of under-5 year mortality in the world. Figure (4) shows that the majority sample of the study of urban during 2008 about (55.85%).

CONCLUSION

This study concluded that the high rate of childhood mortality recognized in Mosul city during years (2008 - 2009 - 2010 -2011) together with the presence of high fertility rate, the prevalence mortality rate under 5 years in male more than female the prevalence mortality rate under 5 years is more common in the age groups less than one years. the prevalence mortality rate under 5 years increased in Urban areas and Most common causes of death child under 5 years respiratory disease & septicemia.

RECOMMENDATION:

The researcher recommended that there is urgent need for strategy for prevention of childhood mortality in Iraq through health services provision & socioeconomic development & improvement of family planning facilities and Construction further & nation – wide studies can be conducted on a large screening.

REFERENCES

1. World Health Organization. Monitoring the Situation of Children and Women: Findings from the Multiple Indicator Cluster Survey, *UNICEF report*, 2006 .
2. Rutstein SO. Factors associated with trends in infant and child mortality in developing countries during the 1990s. *Bulletin of the World Health Organization* 2000; 78: 1256-70 .
3. Korenromp EL, Arnold F, Williams BG, Nahlen BL and Snow RW .Monitoring trends in under-5 mortality rates through national birth history surveys. *International Journal of Epidemiology* 2004; 33: 1293-1301.
4. Dunkelberg E. Measuring Child Well-Being in the Mediterranean Countries - Toward a Comprehensive Child Welfare. Amsterdam Institute for International Development, *Wagstaff and Watanabe* (2000): p 23.
5. Randall B, Wilson A. The 2006 annual report of the Regional Infant and Child Mortality Review Committee. *S D Med* 2007; 60(9): 343, 345,347.
6. Ahmad OB, Lopez AD and Inoue M. The decline in child mortality: a reappraisal. *Bulletin of the World Health Organization*, 2000, 78 (10): 1175-1191.
7. Khawja M. The extraordinary decline of infant and childhood mortality among Palestinian refugees. *Social Science and Medicine* 2004; (58): 463-470.
8. World Health Organization. Facts and figures from the World Health Report 2005: Make every mother and child count. 1211 Geneva 27, Switzerland: *WHO report*; 2007.
9. Etard JF, Hesran J L, Diallo A, Diallo JP, Ndiaye JL and Delaunay V. Childhood mortality and probable causes of death using verbal autopsy in Niakhar. *International Journal of Epidemiology* 2004; 33: 1286-1292.
10. Wagstaff A. Socioeconomic inequalities in child mortality: comparisons across nine developing countries. *Bulletin of the World Health Organization* 2000; 78(1): 19-29.
11. Shaw C, Blakely T, Atkinson J and Crampton P. Do social and economic reforms change socioeconomic inequalities in child mortality? A case study: New Zealand 1981-1999. *Journal Epidemiology Community Health* 2005; 59: 638-644.
12. Nersesian WS. Infant mortality in socially vulnerable populations. Annual review of public health, 1988, 9:361–77.
13. McCormick MC. The contribution of low birth weight to infant mortality and childhood mortality. *New England journal of medicine*, 1985, 312:82–90

14. Bixby LR. Infant mortality in Costa Rica: explaining the recent decline. *Studies in family planning*, 1986, 17:57–65.
15. Hamvas A et al. The influence of wider use of surfactant therapy on neonatal mortality among blacks and whites. *New England journal of medicine*, 1996, 334: 1635–40
16. Park K. Park's textbook of preventive and social medicine, 14th ed. Jabalpur, India, Banarsides Bahanot, 1995.
17. Geronimus AT. On teenage childbearing and neonatal mortality in the United States. *Population and development review*, 1987, 13:245–79.
18. National Center for Health Statistics. Infant mortality by birth weight and other characteristics: United States, 1985 birth cohort. *Vital health statistics*, 1994, 20:24.
19. Singh GK, Kposowa AJ. A comparative analysis of infant mortality in major Ohio cities: Significance of socio-biologic factors. *Applied behavioral science review*, 2009, 2(1):77–94.
20. Polit D. and Hungler B. *Nursing Research: Principle and methods*, 5th Ed Philadelphia : Lippincott company .1995 p.25.
21. Bryce J, Boschi-Pinto C, Shibuya K, Black RE; WHO Child Health Epidemiology Reference Group. WHO estimates of the causes of death in children. *Lancet* 2005; 365(9465): 1147-52.
22. Bhutta ZA, Belgaumi A, Abdur Rab M, Karrar Z, Khashaba M, Mouane N. Child health and survival in the Eastern Mediterranean region. *BMJ* 2006; 333(7573): 839-42.
23. A Better World For All. Infant and Child Mortality [Online]. 2007 Jan 1. Available from: [URL:http://www.paris21.org/betterworld/infant.htm](http://www.paris21.org/betterworld/infant.htm)
24. Black RE, Morris SS, Bryce J. Where and why are 10 million children dying every year? *Lancet* 2003; 361(9376): 2226-34.
25. UN Millennium Project Task Force on Child Health and Maternal Health. Who's got the power? Transforming health systems for women and children. New York: UNDP, 2005.
26. Krug A, Pattinson RC, Power DJ. Why children die: an under-5 health care survey in Mafikeng region. *S Afr Med J* 2004; 94(3): 202-6.
27. Wang YP, Miao L, Qian YQ, Liang J, Wu YQ, Zhu J, et al. Analysis of under 5 years old children mortality and the leading death cause in China from 1996 to 2000. *Zhonghua Yu Fang Yi Xue Za Zhi* 2005; 39(4): 260-4.
28. Rutstein SO. Effects of preceding birth intervals on neonatal, infant and under-five years mortality and nutritional status in developing countries: evidence from the demographic and health surveys. *Int J Gynaecol Obstet* 2005; 89 Suppl 1: S7-24.
29. Grandesso F, Sanderson F, Kruijt J, Koene T, Brown V. Mortality and malnutrition among populations living in South Darfur, Sudan: results of 3 surveys, September 2004. *JAMA* 2005; 293(12): 1490-4.